Portal Pressure Changes After HCV Eradication in HIV/HCV+ Patients With Cirrhosis

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Background

- Decompensation in cirrhosis results primarily from portal hypertension, which is defined as a pathologic increase in the hepatic venous pressure gradient (HVPG)[1].
- HVPG is the most accurate predictor of decompensation and hepatocellular carcinoma in patients with compensated cirrhosis [2]. In addition, HVPG is an independent predictor of death in patients with decompensated cirrhosis [3].
- Therefore, HVPG is considered the best surrogate marker of the natural history of cirrhosis.

1. Sanyal AJ. Gastroenterology 2008; 134(6): 1715-28.
2. Ripoll C. Gastroenterology 2007; 133(2): 481-8.
3. Ripoll C. Hepatology 2005; 42(4): 793-801.

Rationale

- Adequate reduction in HVPG after pharmacological treatment of portal hypertension in patients with variceal bleeding reduce the probability not only of recurrent bleeding, but also the probability of other complications of end-stage liver cirrhosis, and death [4].
- This adequate reduction in portal pressure has been estimated as a decrease in HVPG of ≥ 20% from baseline or an absolute reduction of HVPG to ≤ 12 mm Hg [4].

Objective

- Our objective was to assess the effect of eradication of HCV after anti-HCV therapy on HVPG in HIV-infected patients with compensated HCV-related cirrhosis

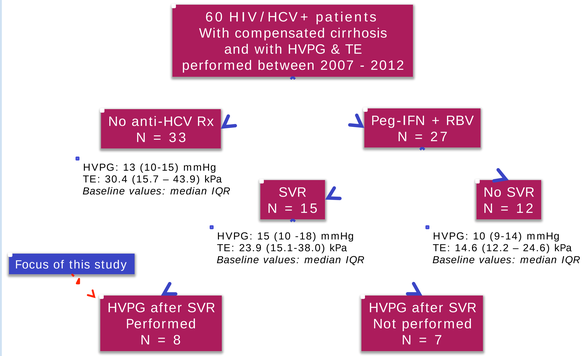
4. Abraldes JG. Hepatology 2003; 37(4): 902-8.

Methods

Patients	• All HIV/HCV+ patients with compensated liver cirrhosis whose HVPG was measured before and after anti-HCV therapy between 2007 and 2012 . • All patients signed an informed consent document before the portal hemodynamic study.
HVPG	• HVPG was measured after an overnight fast as described elsewhere [1]. • The HVPG was calculated as the wedged hepatic venous pressure minus the free hepatic venous pressures
Transient elastography (TE)	• TE was performed immediately before the determination of HVPG using a FibroScan® device (EchoSens, Paris, France). • The median value (expressed in kPa) of 10 successful acquisitions was considered the representative measurement of liver stiffness . • We considered a cutoff value of liver stiffness ≥ 14 kPa as diagnostic of liver cirrhosis.

1) Groszmann RJ. Hepatology 2004,39:280-282

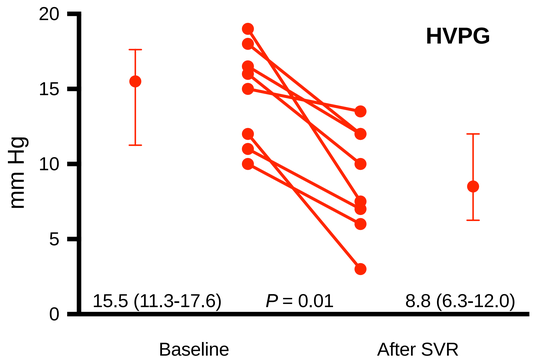
Flow chart



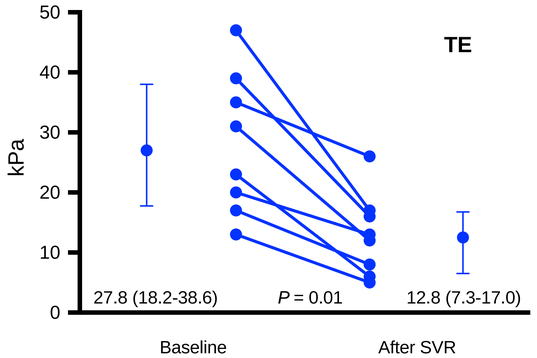
Characteristics of 8 patients with HVPG determination before and after SVR

Patient	1	2	3	4	5	6	7	8
Age, years	48	53	46	50	48	51	42	43
HIV transmission category	IDU	IDU	IDU	IDU	IDU	IDU	IDU	IDU
CDC clinical category	C	A	C	A	A	C	A	A
Nadir CD4+, cells/mm^3	123	200	109	99	192	182	211	120
Combination antiretroviral therapy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baseline CD4+, cells/mm^3	516	649	480	244	460	404	784	299
HIV-RNA, copies/mL	<50	<50	<50	<50	<50	<50	<50	<50
HCV genotype	1b	1b	1a	3	1	3	3	3
HVPG at baseline, mmHg	16.0	11.0	19.0	18.0	16.5	15.0	10.0	15.0
HVPG after SVR, mmHg	10.0	7.0	7.5	12.0	12.0	3.0	6.0	13.5
% Reduction in HVPG after SVR	37.5	36.4	60.5	33.3	27.3	80.0	40.0	10.0
Interval between HVPG studies, months	18	12	9	30	28	21	18	7
TE at baseline, kPa	39.7	17.6	46.0	26.0	35.0	13.1	23.9	47.2
TE after SVR, kPa	16.3	8.8	12.1	13.5	26.3	5.3	6.8	17.3
% Reduction in TE after SVR	56	50	74	48	25	60	72	72

Median (IQR) values and individual values of HVPG at baseline and after SVR



Median (IQR) values and individual values of TE at baseline and after SVR



Discussion

- Our findings bring a pathophysiological correlate to the observation of clinical benefits obtained with SVR in patients with HCV-related compensated liver cirrhosis with or without HIV infection [1, 2].
- According to our experience and that of others, most patients with HCV-related compensated cirrhosis and portal hypertension achieve adequate reductions in HVPG after SVR following anti-HCV therapy, although a small fraction do not achieve that goal. These patients probably remain at risk of developing complications related to portal hypertension despite eradication of HCV [2, 3].

1. van der Meer AJ. JAMA 2012; 308(24): 2584-93.
2. Berenguer J. Clin Infect Dis 2012; 55(5): 728-36.
3. Aleman S. Clin Infect Dis 2013; 57(2): 230-6.

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Conclusions

① The results of our study support the notion that eradication of HCV is associated with a marked and clinically significant reduction in portal pressure in most—but not all—HIV-infected patients with HCV-related cirrhosis

② HVPG determinations, or even TE, could help to identify patients with HCV-related cirrhosis who remain at risk for decompensation or hepatocellular carcinoma despite having achieved SVR. This issue should be addressed in prospective studies.